

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An apparatus for irradiating a laser beam comprising:
a laser oscillator for emitting a plurality of laser beams having different wavelengths from each other;
an optical system for uniforming an energy distribution of each of said plurality of laser beams ~~and for processing~~ by synthesizing each of said plurality of laser beams having different wavelengths from each other into ~~[[said]]~~ a laser beam having a square or rectangular cross-section on an object to be irradiated; and
a stage over which the object to be irradiated is disposed.
2. (Previously Presented) An apparatus according to claim 1 wherein said laser oscillator comprises a YAG laser.
3. (Previously Presented) An apparatus according to claim 1 wherein said laser oscillator comprises a zigzag-slab-style YAG laser.
4. (Original) An apparatus according to claim 1 wherein said object is a non-single crystal semiconductor film comprising silicon.
5. (Original) An apparatus according to claim 1 wherein said plurality of laser beams having different wavelengths from each other comprise second and third harmonics of a YAG laser beam.

6. (Original) An apparatus according to claim 1 wherein said plurality of laser beams having different wavelengths from each other comprise second and fourth harmonics of a YAG laser beam.

7. (Original) An apparatus according to claim 1 wherein said plurality of laser beams having different wavelengths from each other comprise third and fourth harmonics of a YAG laser beam.

8. (Original) An apparatus according to claim 1 wherein each of said plurality of laser beams having different wavelengths from each other has a wavelength of 600 nm or less.

9. (Original) An apparatus according to claim 1 further comprising:
a load/unload chamber;
a transfer chamber;
a robot arm; and
a laser irradiation chamber.

10. (Currently Amended) An apparatus for irradiating a laser beam with a linear cross-section on an object to be irradiated, said apparatus comprising:

a laser oscillator for emitting a plurality of laser beams having different wavelengths from each other;

an optical system for uniforming an energy distribution of each of said plurality of laser beams ~~and for processing~~ by synthesizing each of said plurality of laser beams having different wavelengths from each other into a laser beam having a linear cross-section; and

means for moving the object to be irradiated relatively to said plurality of laser beams.

11. (Previously Presented) An apparatus according to claim 10 wherein said laser oscillator comprises a YAG laser.

12. (Previously Presented) An apparatus according to claim 10 wherein said laser oscillator comprises a zigzag-slab-style YAG laser.

13. (Original) An apparatus according to claim 10 wherein said object is a non-single crystal semiconductor film comprising silicon.

14. (Original) An apparatus according to claim 10 wherein said plurality of laser beams having different wavelengths from each other comprise second and third harmonics of a YAG laser beam.

15. (Original) An apparatus according to claim 10 wherein said plurality of laser beams having different wavelengths from each other comprise second and fourth harmonics of a YAG laser beam.

16. (Original) An apparatus according to claim 10 wherein said plurality of laser beams having different wavelengths from each other comprise third and fourth harmonics of a YAG laser beam.

17. (Original) An apparatus according to claim 10 wherein each of said plurality of laser beams having different wavelengths from each other has a wavelength of 600 nm or less.

18. (Original) An apparatus according to claim 10 further comprising:
a load/unload chamber;

a transfer chamber;
a robot arm; and
a laser irradiation chamber.

19.-30. (Canceled)

31. (Currently Amended) An apparatus for irradiating a laser beam with a linear cross-section on an object to be irradiated, said apparatus comprising:

a laser oscillator for emitting a plurality of laser beams having different wavelengths from each other;

an optical system for uniforming an energy distribution of each of said plurality of laser beams ~~and for processing~~ by synthesizing each of said plurality of laser beams having different wavelengths from each other into a laser beam having a linear cross-section; and

a stage over which the object to be irradiated is disposed.

32. (Previously Presented) An apparatus according to claim 31 wherein said laser oscillator comprises a YAG laser.

33. (Previously Presented) An apparatus according to claim 31 wherein said laser oscillator comprises a zigzag-slab-style YAG laser.

34. (Previously Presented) An apparatus according to claim 31 wherein said object is a non-single crystal semiconductor film comprising silicon.

35. (Previously Presented) An apparatus according to claim 31 wherein said plurality of laser beams having different wavelengths from each other comprise second and third harmonics of a YAG laser beam.

36. (Previously Presented) An apparatus according to claim 31 wherein said plurality of laser beams having different wavelengths from each other comprise second and fourth harmonics of a YAG laser beam.

37. (Previously Presented) An apparatus according to claim 31 wherein said plurality of laser beams having different wavelengths from each other comprise third and fourth harmonics of a YAG laser beam.

38. (Previously Presented) An apparatus according to claim 31 wherein each of said plurality of laser beams having different wavelengths from each other has a wavelength of 600 nm or less.

39. (Previously Presented) An apparatus according to claim 31 further comprising:
a load/unload chamber;
a transfer chamber;
a robot arm; and
a laser irradiation chamber.

40. (Previously Presented) An apparatus for irradiating a laser beam according to claim 1, wherein the optical system comprises a first optical system and a second optical system.

41. (Previously Presented) An apparatus for irradiating a laser beam according to claim 10, wherein the optical system comprises a first optical system and a second optical system.

42. (Previously Presented) An apparatus for irradiating a laser beam according to claim 31, wherein the optical system comprises a first optical system and a second optical system.

43. (Previously Presented) An apparatus for irradiating a laser beam according to claim 40, wherein each of the first optical system and the second optical system comprises a first cylindrical lens array, a second cylindrical lens array, a first cylindrical lens, a second cylindrical lens and a third cylindrical lens.

44. (Previously Presented) An apparatus for irradiating a laser beam according to claim 41, wherein each of the first optical system and the second optical system comprises a first cylindrical lens array, a second cylindrical lens array, a first cylindrical lens, a second cylindrical lens and a third cylindrical lens.

45. (Previously Presented) An apparatus for irradiating a laser beam according to claim 42, wherein each of the first optical system and the second optical system comprises a first cylindrical lens array, a second cylindrical lens array, a first cylindrical lens, a second cylindrical lens and a third cylindrical lens.

46. (Previously Presented) An apparatus for irradiating a laser beam according to claim 10, wherein the means for moving the object is a ball screw type or a linear motor.